Wetland Metaphors

Overview: In this activity, students will explore a selection of common objects as physical metaphors for natural wetland functions.

Activity Adapted From: Wetland Metaphors, Project WILD Aquatic and The Wonders of Wetlands

Recommended Grades:
3 and up

Key Concepts: Wetlands serve many ecological functions.

Objectives:
Students will be able to:
- describe the characteristics of wetlands
- evaluate the importance of wetlands to wildlife and humans
- identify ecological functions of wetlands

Possible Locations:
- anywhere on Refuge

Materials Provided by the Refuge:
- photos of wetlands habitats
- wetland metaphor cards
- photos of wetland animals

Time Frame for Conducting this Activity (25 minutes)

Introduction to Wetlands (5 minutes)
- seasonal marsh, permanent pond
- what a metaphor is

Wetland Metaphors (10 minutes)
- hand out wetland metaphor cards to 10 volunteers
- discuss the different metaphors and what they represent

Wildlife Metaphors (8 minutes)
- think of metaphors for different aspects of different wildlife

Wrap-up (2 minutes)
- metaphors can be found everywhere
- name the 10 wetland metaphors again

How this Activity Relates to the Refuge's Resources

What are the Refuge's resources?
- significant wildlife habitat
- endangered species
- migratory birds
- resident wildlife

What makes it necessary to manage the resources?
- Wildlife may eat or become entangled in trash such as balloons, fishing line and Styrofoam peanuts.
- Loss of wetland habitats for wildlife due to development, such as landfills, buildings, agriculture land, roads, etc makes it more difficult for wildlife to find food, water, shelter and space.

What can students do to help?
Refuge staff acquire and preserve wetland habitat, but we need your help!
- be responsible for your own trash
- reduce, reuse and recycle, decreasing the need for landfills
- never dump anything down storm drains – pollution can contaminate and destroy wildlife habitat
- adopt a wetland or an endangered species
- only take your dog to place they are permitted and keep it on a leash
- keep your cat inside your house; they catch birds
- teach others what you have learned about habitats and endangered species

Supporting Information About This Activity

Wetlands

- Wetlands are many different things to many different people. Some people have never heard of or thought about wetlands. Others are working actively to protect wetlands because of their importance.
- Wetlands include areas such as freshwater and saltwater marshes, wet meadows, swamps, lagoons, bogs and prairie potholes. All wetlands, whether coastal or inland, provide special habitats that serve areas far beyond their boundaries. Wetlands are especially important to plants, animals, humans and the entire environment.
- Because of the abundance of food, vegetative cover (shelter), and water found there, most wetlands are rich with diverse wildlife species.
- Wetlands here at the Refuge, for example, provide breeding, resting and wintering habitats for migratory birds – including ducks, geese, swans, cranes and shorebirds. Many species of fish that are important for commercial and personal use by humans reproduce and spend part, or all, of their life cycles in fertile wetlands adjacent to larger, more open bodies of water. These fish species include bass and salmon. A wide variety of reptiles, amphibians, insects and crustaceans also breed and live in wetlands. Frogs and toads, western pond turtles, snakes, dragonflies, water striders and crayfish flourish in wetland habitats here at the Refuge. Many mammals – from muskrats and beaver to black-tailed deer and coyote – also depend on wetland areas.
- Wetlands are often referred to as "nurseries" because they provide critical breeding and rearing habitats for countless numbers and kinds of wildlife.
- Wetlands also have the unique ability to purify the environment. They act as natural filtering systems and have been shown to be extremely effective. For example, they can trap and neutralize sewage waste, allow silt to settle and promote the decomposition of many toxic substances.
- The importance of vegetation associated with wetlands cannot be overlooked. Plants absorb nutrients and help cycle them through food webs. Plants also help keep nutrient concentrations from reaching toxic levels. Plants slow down water flow, causing silt to settle out. Through photosynthesis, plants add oxygen to the system and provide food to other life forms. Of great importance to humans are the flood-control characteristics of wetlands; they absorb excess water until it gradually drains away down the streams and rivers and through the soil. Acting as buffers, healthy wetlands prevent flooding and erosion. In dryer periods, wetlands hold precious moisture after open bodies of water have disappeared.
- The many activities that take place in wetlands make them among the most productive ecosystems in the world.
- As remarkable and resilient as wetlands are, these unique areas have limits. Their destruction or abuse can have devastating effects on wildlife, humans and overall environmental quality.

Metaphors

- Many of the major attributes of wetlands can be explored through the use of metaphors. A metaphor represents a thing or idea through another thing or idea. "A tree is a home" and "books are windows of thought" are two examples. In this activity, a variety of everyday objects can be used to represent the natural functions of wetlands.

How to Lead This Activity by Following the "Do, Read, Ask" Teaching Format

Introduction to Wetlands (5 minutes)

Do

Have students sit down in front of you.

Read
"Today we're going to talk about a couple of different types of wetland habitats here on the Refuge and then we're going to discover the different functions that they serve.

"The first main type of wetland habitat that is here on the Refuge is seasonal marshes. They provide more food for wildlife during fall and winter than any other habitat. This habitat is characterized by tall grasses and other kinds of plants that grow up out of the water. Depending on the time of year these habitats are flooded (fall/winter) or dry (spring/summer). The plants provide food and places to hide for many kinds of animals including fish, invertebrates, muskrats and lots of birds.

"The second wetland habitat is permanent ponds. This habitat is similar to seasonal marshes, except that these ponds are flooded year-round. This is an important habitat for resident wildlife, especially during the summer when most of the seasonal marshes are dry."

Ask
? Can anyone name a few different kinds of plants and animals that can be found in the wetland habitats on the Refuge?
(Snow geese, mallards, northern pintail, western pond turtles, frogs, water striders, black-tailed deer, coyote, cattail, bulrush, smartweed, cottonwood, willow trees…)

Read
"While there are a few more different types of habitats on the Refuge, we're going to focus on the wetland habitats and the functions they serve through metaphors."

Ask
? Can anyone tell me what a metaphor is?
(A metaphor represents a thing or idea through another thing or idea.)

? Can anyone give me an example of a metaphor?
(Get three examples. Here are some possibilities:
- a tree is a home
- the world is a stage
- books are windows to the imagination)

Wetland Metaphors (10 minutes)
Do
Get the wetland metaphor cards.

Have 10 volunteers come to the front. Give each volunteer a wetland metaphor card.

Read
"One at a time, I'm going to have each of you read the back of the card you have for the whole group and then we're going to explore that metaphor.

"First up, who has the sponge? … Please read the back of your card and show the picture to the whole group." *(The back says "sponge – soaks up water")*

Ask
? Does anyone have an idea of what a sponge represents in wetland habitats?
(Wetlands absorb excess water caused by runoff; they retain moisture for a time even if standing water dries up.)

Read
"Next, who has the bed? … Read the back of your card and show the picture to the whole group please." *(The back says "bed – a place to rest")*

Ask
? Does anyone have an idea of what a bed represents in wetland habitats?
(Wetlands are a resting place for migratory birds.)

Read
"Third, who has the mixer? … Please read the back of your card and show the picture to the whole group." *(The back says "mixer – mixes things up")*

Ask
? Does anyone have an idea of what a mixer represents in wetland habitats?
(Wetlands mix nutrients and oxygen into the water.)

Read
"Alright, who has the crib? … Read the back of your card and show the picture to the whole group please." *(The back says "crib – a safe place for babies to rest")*

Ask
? Does anyone have an idea of what a crib represents in wetland habitats?
(Wetlands provide a nursery that shelters, protects and feeds young wildlife.)

Read
"Fifth, who has the strainer? … Read the back of your card and show the picture to the whole group please." *(The back says "strainer – removes larger solids from liquid")*

Ask
? Does anyone have an idea of what a strainer represents in wetland habitats?
(Wetlands strain silt, debris and such from water.)

Read
"Next up, who has the filter? … Please read the back of your card and show the picture to the whole group." *(The back says "filter – removes smaller solids from liquid")*

Ask
? Does anyone have an idea of what a filter represents in wetland habitats?
(Wetlands filter smaller impurities from water.)

Read
"Next, who has the antacid tablets? … Please read the back of your card and show the picture to the whole group." *(The back says "antacid tablets – helps relieve chemical problems in the stomach")*

Ask
? Does anyone have an idea of what antacid tablets represent in wetland habitats?
(Wetlands neutralize toxic substances.)

Read
"We're on our eighth metaphor, who has the cereal? … Please read the back of your card and show the picture to the whole group." *(The back says "cereal – food provides energy")*

Ask
? Does anyone have an idea of what cereal represents in wetland habitats?
(Wetlands provide nutrient-rich foods for many types of wildlife.)

Read
"Next, who has the soap? … Read the back of your card and show the picture to the whole group please." *(The back says "soap – used for cleaning")*

Ask
? Does anyone have an idea of what soap represents in wetland habitats?
(Wetlands help cleanse the environment.)

Read
"Last, who has the zoo? … Please read the back of your card and show the picture to the whole group." *(The back says "zoo – has lots of animals")*

Ask
? Does anyone have an idea of what a zoo represents in wetland habitats?
(Wetlands are a habitat for diverse wildlife.)

Read
"Alright, those are just some of the ecological functions wetlands serve. Now I'm going to collect the metaphor cards. Thank you to all of my volunteers; you can have a seat with the rest of the group."

Wildlife Metaphors (8 minutes)
Read
"Now that we've explored wetland metaphors, let's take a look at wildlife that can be found in the wetlands."

Do
As you talk about each animal, hold up the photo of that animal.

Note – these are just possible metaphors for these animals, if the students think of a different metaphor go with it.

Read
"Here's the plan, I'm going to hold up a photo of an animal and take a minute to think of a metaphor for some part of the animal.

"First, we're going to take a look at a bald eagle. Look at their talons. Eagles and other raptors use their talons to kill prey and pick up objects that are soft enough for their talons to stick into."

Ask
? Can anyone think of a metaphor for an eagle's talons?
(Salad tongs, pinchers…)

Read
"How about this coyote's ears; they have a keen sense of hearing aided by their erect funnel shaped ears, which pull sound into the hearing canal."

Ask
? Can anyone think of a metaphor for a coyote's ears?
(Megaphone, funnel…)

Read
"Next we have a great blue heron's legs. Herons and egrets stand in water on their long, stick-like legs. These legs enable them to wade deep into the water in search of food."

Ask
? Can anyone think of a metaphor for a heron's legs?
(Stilts…)

Read
"Let's take a closer look at a duck's feet; the webbed foot for the duck is a very important tool for propelling effortlessly through the wetland, whether walking on soft wet ground or paddling quickly through open water."

Ask
? Can anyone think of a metaphor for a duck's feet?
(Snowshoe, diver's fins…)

Read
"What about a bird's wing feathers; their feathers zip together, enabling them to be sturdy and yet quite flexible. Birds can spread and clean these feathers with their beak, then pull them back together when flight is required."

Ask
? Can anyone think of a metaphor for a bird's wing feathers?
(Velcro, zipper…)

Read
"Last we have a frog's tongue; frogs perform remarkable marksmanship with their sticky tongues, which are attached at the front of the mouth rather than the back of the throat. The

sticky end enables the frog to pull in most things that it can touch."

Ask
? Can anyone think of a metaphor for a frog's tongue?
(Snapping whip…)

Wrap-up (2 minutes)
Read
"There are lots of metaphors for pretty much anything you can think of. So when you're trying to remember why wetlands are so important and why we should protect them, remember the metaphors.

"Help me think of the 10 metaphors for wetlands one last time:

1. sponge
2. bed
3. mixer
4. crib
5. strainer
6. filter
7. antacid tablets
8. cereal
9. soap
10. zoo

"Good job! Any questions before we finish?"

Do
If you're the last group to use this activity gather all the materials and bring them into the visitor center or to the Refuge staff member that was helping your group. Thank you!